

We claim:

1. In a pull out system having at least one stationary rail cooperating with at least one movable rail through rollers, the improvement which comprises at least one of the following items:
as the at least one stationary rail an inverted French F-channel;
as the at least one movable rail an inverted U-channel; and
among the rollers, at least one being a cam-follower bearing.
2. The improvement of claim 1, which system is for vehicles and trailers, and includes the inverted French F-channel.
3. The improvement of claim 2, wherein the at least one stationary rail has a first set of rollers mounted thereon, said rail adapted for receiving a second set of rollers; and a movable rail having the second set of rollers mounted thereon, wherein the movable rail is mounted to the rail with rolling contact both between the first set of rollers and the movable rail and between the stationary rail and the second set of rollers.
4. The improvement of claim 2, which includes a stationary mounting frame having as the at least one stationary rail a set of parallel rails having a first set of rollers mounted thereon, said set of rails adapted for receiving a second set of rollers; and a subcombination having a movable mounting frame having as the at least one movable rail a set of parallel movable rails with a second set of rollers mounted thereon, and a load-bearing surface mounted to the movable frame, the movable frame and

load-bearing surface subcombination mounted to the stationary mounting frame with rolling contact both between the first set of rollers and the movable frame and between the set of parallel rails and the second set of rollers.

5. The improvement of claim 1, wherein:

the inverted French F-channel has a lower rail roller track; a channel track foot that bounds a bottom of the lower rail roller track; an upward facing lower roller track face on the channel track foot; a stabilizing base foot, which extends opposite the channel track foot; a vertically extending face that extends from the channel track and stabilizing base feet; a central portion extending horizontally from the vertically extending face, which has an upper roller track face, and a downward facing roller track face that forms with the upward facing lower roller track face and so forth the lower rail roller track; the inverted U-channel has bearing-mounting portion; depending, rail-aligning portion; and upper, tray or other load-bearing surface mounting and supporting portion; and the at least one cam-follower bearing includes a plurality of pin or needle type bearings.

6. The improvement of claim 2, wherein:

the inverted French F-channel has a lower rail roller

track; a channel track foot that bounds a bottom of the lower rail roller track; an upward facing lower roller track face on the channel track foot; a stabilizing base foot, which extends opposite the channel track foot; a vertically extending face that extends from the channel track and stabilizing base feet; a central portion extending horizontally from the vertically extending face, which has an upper roller track face, and a downward facing roller track face that forms with the upward facing lower roller track face and so forth the lower rail roller track; the inverted U-channel has bearing-mounting portion; depending, rail-aligning portion; and upper, tray or other load-bearing surface mounting and supporting portion; and the at least one cam-follower bearing includes a plurality of pin or needle type bearings.

7. The improvement of claim 3, wherein:

the inverted French F-channel has a lower rail roller track; a channel track foot that bounds a bottom of the lower rail roller track; an upward facing lower roller track face on the channel track foot; a stabilizing base foot, which extends opposite the channel track foot; a vertically extending face that extends from the channel track and stabilizing base

f et; a central portion extending horizontally from the vertically extending face, which has an upper roller track face, and a downward facing roller track face that forms with the upward facing lower roller track face and so forth the lower rail roller track; the inverted U-channel has bearing-mounting portion; depending, rail-aligning portion; and upper, tray or other load-bearing surface mounting and supporting portion; and the at least one cam-follower bearing includes a plurality of pin or needle type bearings.

8. The improvement of claim 4, wherein:
the inverted French F-channel has a lower rail roller track; a channel track foot that bounds a bottom of the lower rail roller track; an upward facing lower roller track face on the channel track foot; a stabilizing base foot, which extends opposite the channel track foot; a vertically extending face that extends from the channel track and stabilizing base feet; a central portion extending horizontally from the vertically extending face, which has an upper roller track face, and a downward facing roller track face that forms with the upward facing lower roller track face and so forth the lower rail roller track; the inverted U-channel has bearing-mounting portion;

depending, rail-aligning portion; and upper, tray or other load-bearing surface mounting and supporting portion; and

the at least one cam-follower bearing includes a plurality of pin or needle type bearings.

9. The improvement of claim 8, wherein the first set of rollers on each stationary rail, inverted F-channel includes at least three of the cam-follower bearings, and an at least about 3000-pound load can be supported.

10. The improvement of claim 9, wherein at second set of rollers on each movable rail, inverted U-channel includes at least three rollers.

11. The improvement of claim 1, wherein all three of the items are present.

12. The improvement of claim 2, wherein all three of the items are present.

13. The improvement of claim 3, wherein all three of the items are present.

14. The improvement of claim 4, wherein all three of the items are present.

15. The improvement of claim 4, wherein the movable mounting frame includes a support member for supporting a slide-in/out accessory.

16. The improvement of claim 15, wherein the slide-in/out accessory is present.

17. In combination, the improvement of claim 2, mounted to a cargo area of a vehicle or trailer.

18. In combination, the improvement of claim 4, mounted to a cargo area of a vehicle or trailer.

19. In combination, the improvement of claim 6, mounted to a cargo area of a vehicle or trailer.

20. In combination, the improvement of claim 8, mounted to a cargo area of a vehicle or trailer.

21. The combination of claim 18, wherein the movable mounting frame includes a support member for supporting a slide-in/out accessory.

22. The combination of claim 21, wherein the slide-in/out accessory is present.

23. An inverted French F-channel comprising a lower rail roller track; a channel track foot bounding a bottom of the lower rail roller track; an upward facing lower roller track face on the channel track foot; a stabilizing base foot extending opposite the channel track foot; a vertically extending face extending from the channel track and stabilizing base feet; a central portion extending horizontally from the vertically extending face, which has an upper roller track face, and a downward facing roller track face that forms with the upward facing lower roller track face and so forth the lower rail roller track.

24. The inverted French F-channel of claim 23, further

including at least three rollers mounted thereon.

25. The inverted French F-channel of claim 24, wherein th
at least three rollers are cam-follower bearings.

26. In a movable frame for a pull out drawer system, the
improvement which comprises a support member for supporting a
slide-in/out accessory.

27. The movable frame of claim 26, wherein the slide-in/out
accessory is present.

28. The movable frame of claim 27, wherein the slide-in/out
accessory is a drawer.

29. The movable frame of claim 27, wherein the slide-in/out
accessory is a ramp.